REMARKS

Claims 30, 32, and 40-52 are pending in the application upon entry of this amendment. Claims 1-29, 31, and 33-39 have been canceled. Claims 40-52 have been newly added. Favorable reconsideration of the application is respectfully requested in view of the amendments to the claims and following comments.

Applicants acknowledge with appreciation the Examiner's finding that claims 30 and 32 are allowed; and that claims 6, 10, 12-19, 24, 26, 29, and 39 are directed to allowable subject matter, and that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

I. NEWLY ADDED CLAIMS

Newly added claims 40-52 more specifically recite features of the canceled claims. For example, newly added independent claim 40 recites, *inter alia*, features that correspond to canceled claims 1, 20, and 22. Newly added independent claim 47 recites, *inter alia*, features that correspond to canceled claims 34 and 35. Claims 42-46 recite features that correspond to canceled claims 23-26. Claims 49-52 recite features that correspond to canceled claims 36-39.

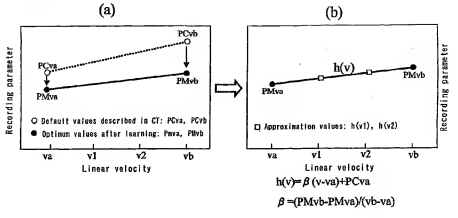
The claims of the present application are directed to a method and apparatus for the optimization of recording parameters on an optical disc. The claimed features are exemplified by Figure 6 and 7 of the present application and the accompanying description. Figure 6 is a diagram showing a relationship between linear velocities and a recording parameter before optimization (6a) and a relationship between linear velocities and the recording parameter after optimization (6b). Figure 7 is a flowchart illustrating the claimed procedure for optimizing the recording parameter.

With exemplary reference to Figure 6, reproduced below, and in accordance with the claimed subject matter, recording parameter learning is performed based on recording parameters corresponding to two recording linear velocities described in the

control track of the optical disc.

Present Application

FIG.6

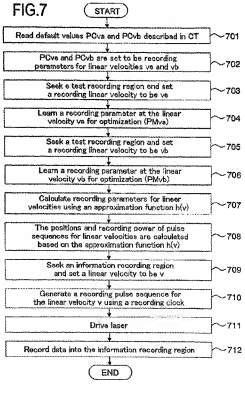


Based on the results, an approximation function h(v) for a recording parameter corresponding to an arbitrary linear velocity is obtained. Thus, after recording parameter learning is performed for two linear velocities, an appropriate recording parameter corresponding to an arbitrary linear velocity can be obtained over a whole range of linear velocities.

Present Application

For example, as recited in claim 40, the claimed step (a) of generating a plurality of pulse sequences corresponding to a plurality of linear velocities includes providing, for each of the recording parameters, corresponding recording parameter values PCv1 and PCv2 for linear velocities v1 and v2 respectively, wherein v1 and v2 are velocities satisfying the relationship va ≤ v1 < v2 ≤ vb (step 701). As illustrated in step 702, the corresponding recording parameter values PCv1 and PCv2 are set for each of the recording parameters (these corresponding recording parameters being provided in the

FIG.7



previous step). As illustrated in steps 703-704, learning is performed using said linear velocity v1 and the corresponding recording parameter value PCv1 and optimization is performed for said linear velocity v1 to obtain a corresponding optimum recording parameter value PMv1 for each of the recording parameters. As illustrated in steps 705-706, learning is performed using said linear velocity v2 and the corresponding recording parameter value PCv2 and optimization is performed for said linear velocity v2 to obtain a corresponding optimum recording parameter value PMv2 for each of the recording parameters. As illustrated in step 707, recording parameters corresponding to an arbitrary linear velocity v are obtained by using a corresponding recording parameter approximation function h(v) obtained based on PMv1 and PMv2.

The claimed step (b) is illustrated in steps 709, 711, and 702. Specifically, while rotating a recording medium with a linear velocity v selected from the plurality of linear velocities, at least one of a recording mark and a space is formed by irradiating the recording medium with a pulse sequence, wherein the pulse sequence is determined by a set of recording parameters calculated from the corresponding recording parameter approximation function h(v).

Independent claim 47 recites similar features to those described above.

In accordance with the above-described features, it is possible to generate a correct pulse sequence quickly. This is because the present invention does not rely only on measured recording parameters, which are correct and require a long time to measure, and the present invention does not rely only on recording parameters already recorded on a recording medium, which are not correct and require no measurement time.

II. CLAIM REJECTIONS – 35 USC § 102(b)

Claims 1-5, 7-9, 11, 20-23, 25, 27, 28, 31, and 33-38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sugie.

Sugie is directed to a recording device that dynamically varies the linear velocity of an optical drive during a write operation to an optical disc, therefore reducing the likelihood of a buffer under-run event. Sugie discloses the implementation of write power control, which monitors the write process by the laser and maintains the power of the laser on-the-fly so that the write power remains optimal for the writing conditions (i.e., the various reproduction velocities). (Col. 10, lines 54-60.) This is because optimal write power varies with linear velocity. (Col. 10, lines 61-65.) Specifically, the device in Sugie monitors the size/duration of the mark and adjusts the power on-the-fly so as to be appropriate for the current velocity. (Col. 11, lines 6-12.)

Sugie does not teach or suggest *generating a plurality of pulse sequences corresponding to a plurality of linear velocities in the range va to vb…* including *obtaining recording parameters corresponding to an arbitrary linear velocity v by using a corresponding recording parameter approximation function h(v) obtained based on PMv1 and PMv2,* as recited in the claims. Rather, the on-the-fly monitoring of Sugie merely provides a recording power that corresponds to a given linear velocity.

For at least the above reasons, Applicants respectfully submit that Sugie does not teach or suggest the features of the invention as recited in independent claims 40 and 47. Applicants further submit that dependent claims 42-46 and 48-52 recite features that further distinguish the claimed subject matter from the teachings of Sugie. Applicants respectfully request that the rejection be withdrawn.

III. CONCLUSION

Accordingly, all claims are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

/Mark D. Saralino/
Mark D. Saralino
Reg. No. 34,243

The Keith Building
1621 Euclid Avenue
Nineteenth Floor
Cleveland, Ohio 44115
(216) 621-1113